

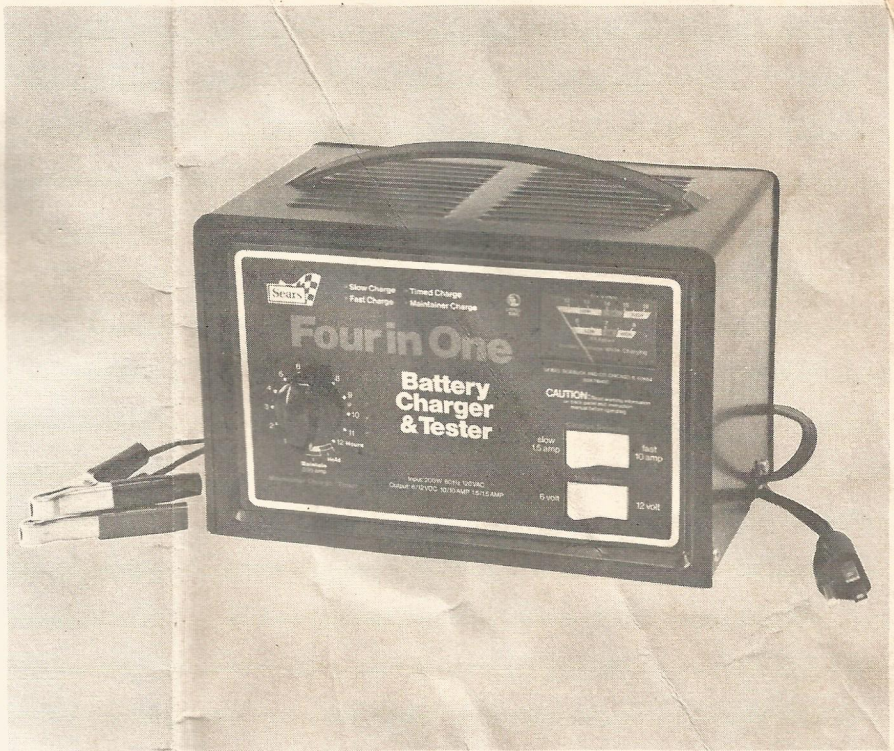
Sears

**OWNERS
MANUAL**

MODEL NO.
608.718400

CAUTION:
Read Rules for
Safe Operation
and Instructions
Carefully

Save These
Instructions



**FOUR-IN-ONE
10/1.5 AMP
BATTERY CHARGER
AND TESTER**

FOR 6 AND 12 VOLT BATTERIES

Operation
Repair Parts

THIS MANUAL WILL HELP YOU USE YOUR SEARS BATTERY CHARGER SAFELY AND EFFICIENTLY

WARNING: WORKING WITH OR NEAR LEAD ACID BATTERIES IS DANGEROUS. BATTERIES CONTAIN SULFURIC ACID AND PRODUCE EXPLOSIVE GASES. A BATTERY EXPLOSION COULD RESULT IN LOSS OF EYESIGHT OR SERIOUS BURNS. PLEASE READ THIS ENTIRE MANUAL CAREFULLY BEFORE USING YOUR CHARGER.

FULL 12 MONTH WARRANTY

If, within twelve months from date of purchase, this battery charger fails due to a defect in materials or workmanship, simply return it to the nearest Sears store throughout the United States, and Sears will repair or replace it, free of charge.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Company, Dept. 698/731A, Sears Tower, Chicago, IL 60684

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

1. This manual contains important safety and operating instructions applicable to the use of battery charger model number 608.718400
 2. Do not expose charger to rain or snow.
 3. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury of persons.
 4. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
 5. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire or electric shock. If extension cord must be used, make sure:
 - a. That pins on plug of extension cord are the same number, size, and shape of those of plug on charger;
 - b. That extension cord is properly wired and in good electrical condition; and
 - c. That wire in cord is proper size as follows: Minimum recommended AWG wire size for various length extension cords used with this charger:
- | | | | | |
|----------------------|----|----|-----|-----|
| Length of Cord, Feet | 25 | 50 | 100 | 150 |
| AWG Size | 18 | 18 | 16 | 14 |
6. Do not operate charger with damaged cord or plug. Replace them immediately.
 7. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to the nearest Sears Service Center.
 8. Do not disassemble charger; take it to the nearest Sears Service Center when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
 9. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

PERSONAL PRECAUTIONS

1. Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
2. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
3. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
4. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid contacts eyes, immediately flood eyes with running cold water for at least 10 minutes and get medical attention immediately.
5. NEVER smoke or allow a spark or flame in vicinity of battery or engine.
6. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical parts that may cause explosion.
7. Remove personal metal items such as rings, bracelets, necklace, and watches when working with a lead-acid battery. A lead-acid battery can produce a short circuit current high enough to weld jewelry to metal, causing a severe burn.
8. Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low-voltage electrical

system other than in an automotive application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

9. DO NOT ATTEMPT TO CHARGE A FROZEN BATTERY... If the case is not cracked, remove the battery to a warm area until the ice has completely melted before attempting to charge.

WARNING — RISK OF EXPLOSIVE GASES.

1. WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.
2. To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products and on engine.

GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS

Charger should be grounded to reduce risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER - Never alter AC cord or plug provided - if it will not fit outlet, have proper outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock.

This battery charger is for use on a nominal 120 volt circuit and has a grounding plug that looks like the plug illustrated in sketch A in Figure 1. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a two-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a proper grounded outlet can be installed by a qualified electrician.

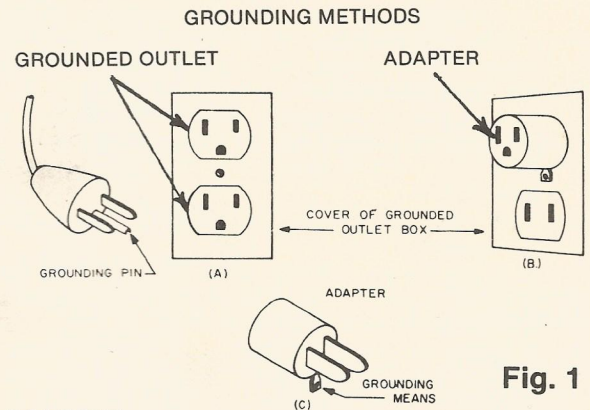


Fig. 1

DANGER - Before using adapter as illustrated, be sure that center screw of outlet plate is grounded. The green colored rigid ear of lug extending from adapter must be connected to a properly grounded outlet - make certain it is grounded. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet cover plate and make ground connection to grounded outlet.

DESCRIPTION OF FUNCTIONS OF MODEL 608.718400 BATTERY CHARGER

The model 608.718400 (Four in One) is a multi-function charger. It has more features than the usual home-type automotive battery charger.

The four charger features available are:

Fast Charge - 10 amperes @ 6 or 12 volts.

Slow Charge - 1.5 amperes @ 6 or 12 volts.

Timed Charge - Fast or slow charge timed up to 12 hours.

Maintainer Charge - .035 amperes @ 6 or 12 volts.

NEW FEATURE

Your new Sears charger is equipped with a dual scale voltmeter.

The voltmeter permits you to use your new Four in One charger as a tester as well as a charger.

USING THE VOLTMETER

- Do not plug AC line cord to power source, when using as tester for **rest** voltage. (Rest or open circuit voltage is that produced by the battery with no load and one hour or more after end of charging.)
- Position AC and DC cords to reduce damage by hood, door or moving engine parts.
- Stay clear of fan blades, belts, pulleys and other parts that could cause injury.
- Set voltage switch to 6V or 12V (whichever your battery is).
- For **Negative** grounded vehicles, connect positive (red, +) charger clip to the positive (+) post of your battery. Connect the negative (black, -) clip to a heavy gauge metal part of the chassis or engine block away from the battery. For **Positive** grounded vehicles, connect negative (black, -) clip to ungrounded negative (-) battery post. Connect the positive (red, +) clip to a heavy gauge metal part of the chassis or engine block away from the battery.

1. WHILE CHARGING

Voltmeter indication is entirely different than that of ammeter used on other chargers.

When first connected to battery, before plugging in AC cord, meter will indicate battery rest voltage. The reading will be below 12.5 volts or even off scale on the left if battery is completely dead. When cord is plugged in, needle will immediately jump to higher reading. Exact point depends on battery charge level, condition of battery, and line voltage. Needle should gradually move to right into the grey area as charge builds. When reading remains constant for an hour, battery is probably fully charged.

If the meter needle immediately jumps to 15V or more, the battery is totally discharged to a point it does not accept charge or it has become badly sulfated, a condition resulting from being left discharged for a long period. When this condition is observed, it is well to leave the charger operating for several hours. If the battery doesn't

begin to accept charge as indicated by the meter reading dropping before again increasing, it is probably defective. If the needle is off scale to the left and doesn't come on scale in a few minutes, the battery may have a shorted cell.

If charger is unplugged but left connected to battery for an hour or so, the meter will indicate the battery rest voltage which should be 12.5 to 13.0V. A lower reading may mean the battery is defective or is not fully charged.

2. Checking Electrical System

If charger is connected to the battery in a vehicle and the AC cord is not plugged in, the voltmeter can be used to troubleshoot some common electrical problems.

A. BATTERY CHECK

- Wait about an hour after vehicle has been run or battery has been charged and observe meter. Reading should be between 12.5 and 13.0 volts. Lower reading indicates discharged or defective battery.
- If battery appears normal try a load test by turning on all vehicle accessories - lights on high beam, heater blower, etc. Readings should not change more than about 0.5 volts when loads are switched off and on.

B. Alternator - Voltage Regulator Check

With charger connected as above, start engine and run at fast idle while observing meter. If the charging system is operating correctly, meter reading should increase to between 14.0 and 14.5 volts. This reading should remain almost constant as accessories are switched on and off. A momentary movement is normal.

The voltmeter provided on your Sears Four in One charger will prove quite useful; however, a word of caution may be in order. The meter has an accuracy of plus or minus 5% of full scale reading. Normally it will be much closer but should not be relied upon for critical applications such as adjusting voltage regulators, etc.

PREPARING TO CHARGE

1. If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
2. Be sure area around battery is well ventilated while battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other non-metallic material as a fan.
3. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes. Keep the battery terminals clean and tight. Use Sears terminal protectors to prevent corrosion. (Available through most Sears stores or catalog.)
4. If battery has removable filler vents, check periodically to make sure battery electrolyte (liquid) covers the plates. If liquid is down, add only **DISTILLED WATER** to bring level up. Figure 2 shows typical battery construction. This also helps purge excessive gas from the cells.

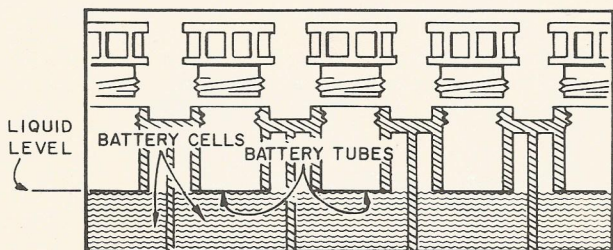


Fig. 2

NOTE: DO NOT OVERFILL (OVERFILLING COULD RESULT IN DAMAGE.) For a battery without cell caps, carefully follow manufacturer's charging instructions.

5. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging, and recommended rates of charge.
6. Determine voltage of battery by referring to car owner's manual. Make sure that output voltage selector switch is set at correct voltage. Select the lowest charge rate to charge battery initially.

SIDE TERMINAL BATTERIES. . . . The following instructions call battery terminals "POSTS". Most new batteries are of the "Side Terminal" variety and do not have posts. To make connections if the battery is out of the vehicle, you need to get two terminal bolts. These can be bought at your Sears Auto Center or any auto parts store. Terminals will be identified by: POS, P, + for positive and NEG, N, - for negative.

CHARGER LOCATION

1. Locate charger as far away from battery as the DC cables permit.
2. Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
3. Never allow battery acid to drip on charger when reading specific gravity or filling battery.
4. Do not operate charger in a closed-in area or restrict ventilation in any way.
5. Do not set a battery on top of charger.

OPERATING INSTRUCTIONS

There is no **OFF** position. When connecting or disconnecting output clamps, the AC input should be disconnected and the charger should be in the **Maintain** position to reduce chances of sparking near battery.

6 Volt Charge - (Hold or timed position) Charges 6 volt batteries @ 1.5 or 10 amperes. Charge rate will drop as the charge builds and battery voltage increases. The voltmeter will indicate an increase in voltage moving the needle into the grey area.

12 Volt Charge - (Hold or timed position) Charges 12 volt batteries @ 1.5 or 10 amperes. Charge rate will drop as the charge builds and battery voltage increases. The voltmeter will indicate an increase in voltage moving the needle into the grey area.

Timed Charge - The timer may be used for either the 6 volt or 12 volt charge and either the 1.5 or 10 ampere current. A charging time of up to 12 hours can be set on the timer. Upon expiration of the selected charge time, the timer automatically moves into the Maintain position.

Maintain Charge - This charge cannot be timed. The purpose of the Maintain charge is to keep your battery at full charge after it has been charged on one of the other charge conditions.

Hold Position - Use this position of the timer when you wish to charge 6 volts or 12 volts and 1.5 or 10 amperes and do not wish the charger to move into the Maintain charge automatically.

DC CONNECTION PRECAUTIONS

1. Connect and disconnect DC output clips only after setting the charger timer to the maintain position and removing AC cord from electric outlet. Never allow clips to touch each other.
2. Attach clips to battery posts and twist or rock back and forth several times to make a good connection. This tends to keep clips from slipping off terminals and helps to reduce risks of sparking.

CHARGING BATTERY IN VEHICLE

FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

1. Position AC and DC cords to reduce risk of damage by hood, door or moving engine parts.
2. Stay clear of fan blades, belts, pulleys and other parts that can cause injury.
3. Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.
4. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see item 5. If positive post is grounded to chassis, see item 6.
5. For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
6. For positive-grounded vehicle, connect NEGATIVE (BLACK) clip from battery charger to NEGATIVE (NEG, N, -) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
7. Set controls to desired battery voltage, current, and charge time.
8. **ONLY** - After completing steps 1 through 6, plug the power cord of the charger into grounded 120 volts, 60 Hz outlet.

PROPER DISCONNECT PROCEDURE

1. Turn timer to "Maintain".
2. **ALWAYS** unplug the charger power cord before doing anything else.
3. Then disconnect the grounded clamp from the chassis or framework.
4. Finally, disconnect the remaining clamp from the battery terminal.

CHARGING TWO BATTERIES IN GM DIESEL POWERED CARS AND PICK UP TRUCKS

1. If your vehicle has two batteries arranged as shown in Figure 3, and both batteries are in good condition, you can charge both at the same time. These batteries are electrically connected in parallel which means the combination produces 12 volts, but has twice the available current of a single battery. The effect is the same as a single very large 12 volt battery.

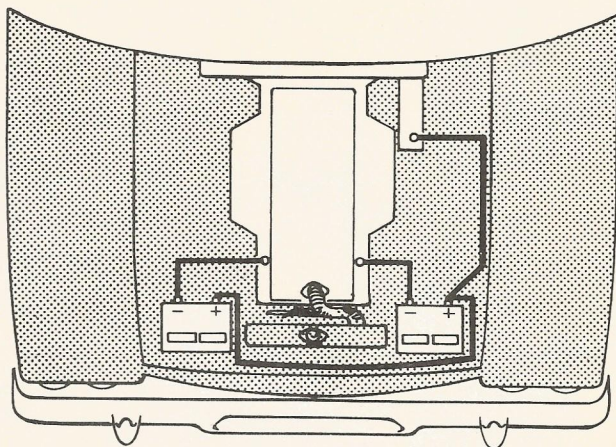


Fig. 3

To charge both batteries, merely connect to either one exactly as described for a single battery. Each will then receive $\frac{1}{2}$ the current shown by the charger meter. Charging time will be double that required for a single battery. FOLLOW THE SAME DISCONNECT PROCEDURE DESCRIBED ABOVE.

2. If you suspect one battery may be defective and you want to charge them separately, disconnect both batteries completely and charge them as described below, either in or out of the vehicle.

TO DISCONNECT BATTERIES IN THE VEHICLE FIRST REMOVE BOTH GROUND (NEGATIVE) CABLES. THEN THE POSITIVE CABLES. RECONNECT THE GROUND CABLES LAST.

IF YOU REMOVE ONE OR BOTH BATTERIES BE EXTREMELY CAREFUL TO REPLACE ALL CABLES EXACTLY. REVERSING THE CONNECTIONS TO ONE BATTERY COULD APPLY 24 VOLTS TO YOUR CAR'S ELECTRICAL SYSTEM AND CAUSE SERIOUS DAMAGE.

CHARGING BATTERY OUT OF VEHICLE

FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR THE BATTERY:

1. Check polarity of battery posts, POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, -) post.
2. Attach at least a 24-inch-long 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, -) battery post. (This can be a standard automobile battery cable available through your Sears Auto Center or other auto parts store.)
3. Set charger timer switch to "MAINTAIN".
4. Connect POSITIVE (RED) charger clip to POSITIVE (POS, P, +) post of battery.
5. Position yourself and free end of cable as far away from the battery as possible - then connect NEGATIVE (BLACK) charger clip to free end of cable.
6. Do not face battery when making final connection.
7. Set controls to desired battery voltage, current, and charge time.
8. ONLY - After completing steps 1 through 6 insert power cord to a grounded outlet of 120 volts, 60 Hz.
9. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

PROPER DISCONNECT PROCEDURE

1. Turn timer to "MAINTAIN".
2. ALWAYS unplug the charger power cord before doing anything else.
3. Then disconnect the negative (black) lead from the end of the 24 inch cable.
4. Finally disconnect positive (red) lead from battery post.

TIME REQUIRED TO CHARGE

1. A battery is fully charged when:
 - a. A hydrometer reading of the electrolyte liquid reaches 1.250 or above (all cells should have approximately the same reading).
 - b. The charger voltmeter stops rising. NOTE: New Alloy "Maintenance Free" and "Low Maintenance" batteries have reached full charge when the voltmeter reads above 15V.
2. OVERCHARGING OF BATTERIES SHOULD BE AVOIDED AS MUCH AS POSSIBLE. Overcharging results in excessive gassing, loss of water, and eventual damage to the battery. Use the 12 Volt low setting for small batteries like those used in garden tractors. Charging should be stopped or rate of charge reduced if battery becomes unusually warm (over about 125 Degrees Fahrenheit) or appears to be bubbling freely.

POSSIBLE CHARGING PROBLEMS

1. THERMAL OVERLOAD SWITCH (CIRCUIT BREAKER) STARTS TO CYCLE:

Your new battery charger has been equipped with (2) automatic heat sensitive switches. This feature protects the battery charger from power overloads. A severely discharged battery, a battery with shorted cells or reversed charger connections at the battery will cause a heat sensitive switch to open. Under these overload conditions, the heat sensitive switch will open, and when cooled down will reset automatically. Reversed charger connections or a battery with shorted cells will cause the heat sensitive switch to cycle indefinitely. This must not be allowed to continue.

If a severely discharged battery is in otherwise good condition, the cycling will stop in 15 to 20 minutes when the battery has developed enough voltage to allow a normal charge rate.

Do not leave a battery unattended if the heat sensitive switch starts cycling. Continued cycling due to overload will eventually wear the heat sensitive switch out.

2. NO METER READING:
 - a. Check switch position.
 - b. Check connections to battery. Be sure polarity is correct (red clip to positive). "Rock" the clips to bite through any dirt or corrosion. If in a vehicle, be sure terminals on battery are clean and tight.
 - c. Check AC outlet or extension cord connections.
 - d. One or more cells may be shorted. Thermal switch in charger may cycle (click on and off).

MAINTENANCE AND CLEANING

Very little maintenance is required. As with any appliance or tool, a few common sense rules will prolong the life of your battery charger.

ALWAYS BE SURE CHARGER IS UNPLUGGED BEFORE DOING ANY MAINTENANCE OR CLEANING.

1. Store in a clean, dry place.
2. Coil up cords when not in use.
3. Clean case and cords with a dry or slightly damp cloth.
4. Clean any corrosion from clips with a solution of water and baking soda.
5. Examine cords periodically for cracking or other damage and have them replaced if necessary.

SERVICE

A parts list, assembly drawing, etc., are provided for use by service personnel.

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

REPAIR PARTS

10A 4 in 1

Battery Charger

MODEL NO. 608.718400

Key	Part No.	Description
1	S D-122262	Cover
2	S D-6-122599	Case
3	S A-1-128431	Handle
4	S A-128214	Decal
5	S T-91157	Transformer
6	xxx S B-128334	Meter (Includes Item 14)
7	S A-7-52464	Thermal Switch
8	xxx S A-1590210	Switch - DPDT (SW 2)
9	xxx S A-1-100556-02	Switch - SPST (SW 1)
10	S A-128176	Input Cord
11	S A-83986	Output Cord
12	S A-105350	Strain Relief
13	S A-105598	Strain Relief
14	S C-128328	P.C. Card
15	S B-128174	Control Assembly
16	S A-2230102	Timer
17	S A-1620101	Knob
18	S A-128462	Label Warning
19	S A-128495	Meter Bracket
20	*STD-541006	6-32 Hex Nut (2)
21	*STD-551206	No. 6 Lockwasher (2)
22	*STD-510602	No. 6-32 x 1/4 Screw (2)
23	**	Rivet (5)
24	***	Rivet (2)
25	****	Rivet (4)
26	*STD-541110	No. 10-32 Hex Nut (2)
27	*STD-551210	No. 10 Lockwasher (2)
28	*STD-510605	No. 6-32 x 1/2 Screw (4)

Owner's Manual and Parts List S A-128218

xxx Replacing any of these will require replacing decal (Key No. 4) also.

For Replacement Use:

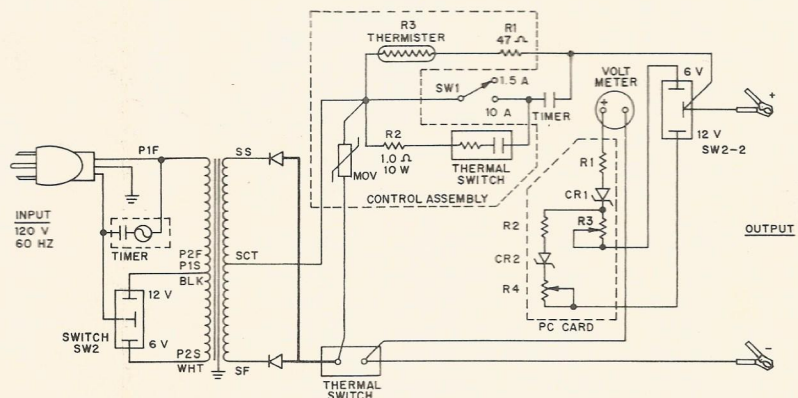
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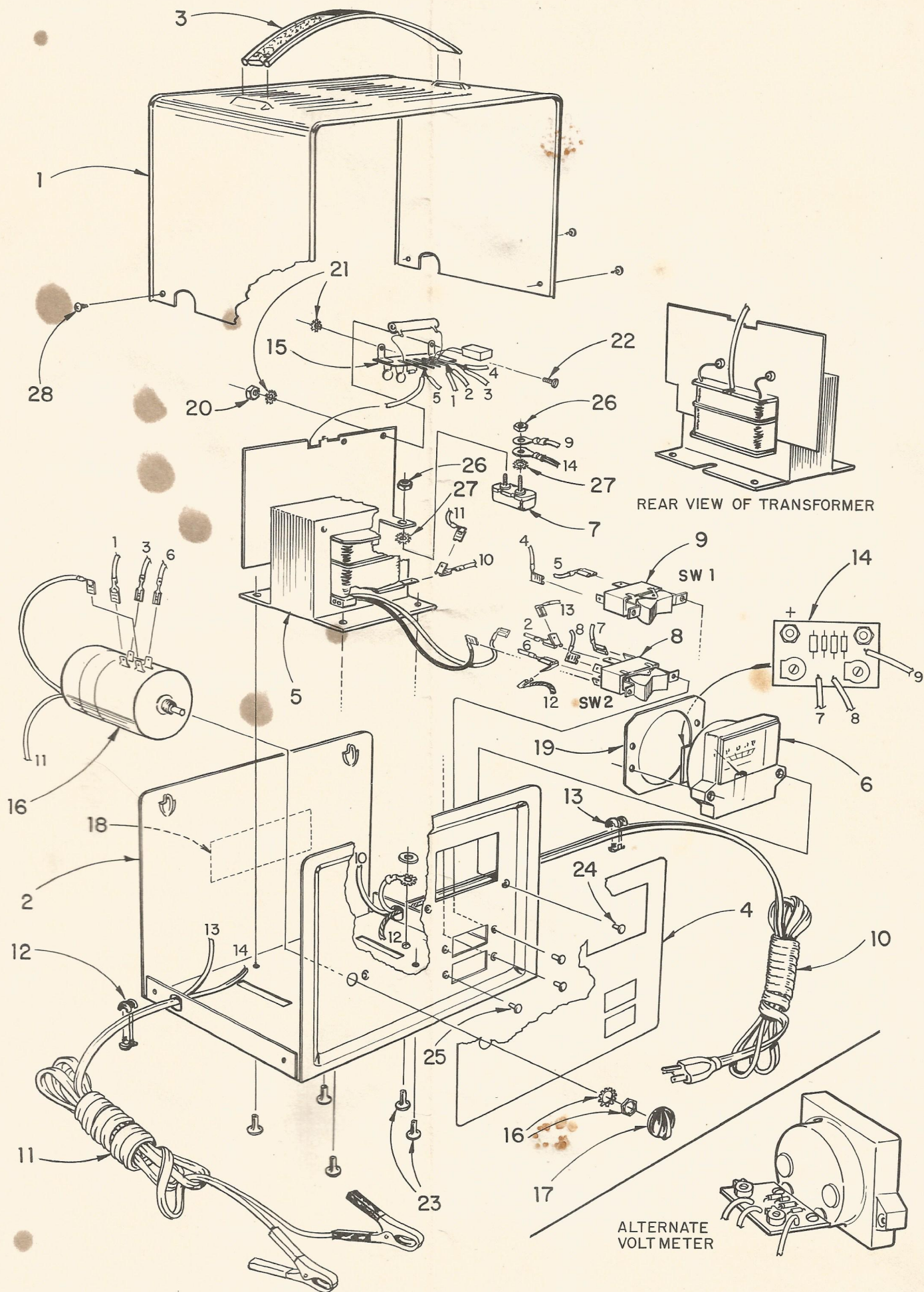
- * STD-511103 - 10-32 x 3/8 Screw (5)
* STD-551210 - No. 10 Lockwasher (4)
* STD-541110 - No. 10-32 Hex Nut (5)

* STD-510607 - No. 6-32 x .75 Screw (2)
* STD-541006 - No. 6-32 Hex Nut (2)

* STD-510602 - No. 6-32 x 1/4 Screw (4)
* STD-541006 - No. 6-32 Hex Nut (4)

*Standard Hardware - may be purchased locally.





Sears

OWNERS MANUAL

MODEL NO. 608.718400

HOW TO ORDER REPAIR PARTS

FOUR-IN-ONE 10/1.5 AMP BATTERY CHARGER AND TESTER

Now that you have purchased your battery charger, should a need ever exist for repair parts or service, simply contact any Sears Service Center and most Sears, Roebuck and Co. stores. Be sure to provide all pertinent facts when you call or visit.

The model number of your battery charger will be found on the front panel.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

- PART NUMBER
- PART DESCRIPTION
- MODEL NUMBER
- NAME OF ITEM

All parts listed may be ordered from any Sears Service Center and most Sears stores.

If the parts you need are not stocked locally, your order will be electronically transmitted to a Sears Repair Parts Distribution Center for handling.

Sears, Roebuck and Company, Sears Tower, Chicago, IL 60684